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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,782	06/30/2003	Jeffrey L. Wise	IS01307MCG	1894

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EXAMINER	
LEVITAN, DMITRY	
ART UNIT	PAPER NUMBER
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/611,782	WISE ET AL.	
	Examiner	Art Unit	
	Dmitry Levitan	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-51* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Specification

1. The disclosure is objected to, because abbreviations or acronyms, Infiniband and RapidIO are cited throughout the specification without explanation. Applicant should provide a full explanation for the acronyms at least at their first occurrence in the specification.

2. The disclosure is objected to, because text on page 6 and corresponding Figure 2, directed to Clos network, as two groups of switches interconnected, as two stage/tier network, contradicts the traditional concept of Clos networks, which comprises at least three stage/tier network: ingress stage, middle stage and the egress stage, as shown in the following references:

a. Zola, US 4,400,627, Summary and Fig.2-7;

b. Grinsec, Electronic switching, Elsevier Science, 1983, pages 99-100 and Fig. 5;

c. Charles Clos, A study of non-blocking switching network, Bell System Technical Journal, March 1953, 32 (5), pages 406-424

d. Clos network, Wikipedia, pages 1-5, 2007.

Examiner requests Applicant to provide evidence in support of network 222 on Fig. 2, which connects first tier of switches 202 with second tier of switches 204, being a Clos network.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 15-51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in

the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not provide sufficient details to enable a skilled in the art to make and use the invention because it does not adequately describe the following:

Regarding claims 15, 16, 30 and 43 how to couple Clos network, bi-delta and mesh networks between left side switches and right side switches.

The specification does not provide enough details about the structure and operation of the elements associated with the above identified claimed features to enable one skilled in the art to make and use the invention without undue experimentation.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 4-6, 10, 11, 13 and 15-51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4, 15, 16, 30 and 43 limitations directed to "Clos network" are unclear, because it is not understood what is Clos network in the light of the disclosure.

Claim 10 limitations, directed to "a constant bandwidth mesh network" is unclear, because it is not understood what is constant bandwidth mesh network, as disclosure does not provide information on which mesh networks are considered constant bandwidth and which are not.

Claims 5 and 11 limitations, directed to "rearrangeably non-blocking network" are unclear, because of multiple references to rearrangeably non-blocking network in the disclosure

with different limitations [0039], [0055]-[0056], therefore it is not understood which networks belong to rearrangeably non-blocking network and which are not.

Claims 6 limitations, directed to "a strictly non-blocking network" are unclear, because it is not understood which networks are considered strictly non-blocking and which are not.

Claim 13 limitations, directed to "fully non-blocking mesh network" are unclear, because of multiple references to fully non-blocking mesh network in the disclosure with different limitations [0041]-[0044], therefore it is not understood which networks belong to fully non-blocking mesh network and which are not.

Claims 15, 16, 30 and 43 limitations, directed to Clos network and bi-delta network and the mesh networks coupled to operate among a plurality of left side switches and a plurality of right side switches, are unclear, because it is not understood how the mentioned three networks are connected.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 30-42 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. A computer-readable medium containing computer instructions is non-statutory matter according to Interim Guidelines for Examination of patent applications for patent subject matter eligibility, Annex IV.

However, Computer instructions recorded on a computer readable media or computer readable media encoded computer instructions are statutory.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3, 9 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kartapoulos (US 5,786,912).

Regarding claims 1 and 2, Kartapoulos teaches the limitations of claims:

A network (network 100, as shown on Fig. 1 and 4:1-35), comprising:

a plurality of left side switches (a plurality of left side switches 105 and 106, shown on Fig. 1 and 4:25-35) and;

a plurality of right side switches (right switches 107 and 108, as shown on Fig. 1), wherein each of the plurality of left side switches are bi-directionally coupled to each of the plurality of right side switches (as clearly shown on Fig. 1, wherein the trunk connections 110-115 are bi-directional 7:17-25), and wherein each of the plurality of right side switches are bi-directionally coupled to each other directly (as clearly shown on Fig. 1).

Regarding claim 3, Kartapoulos teaches transmitting/receiving voice information from left end-node devices 101A-H and right end-node devices 101I-P, as shown on Fig. 1.

Regarding claim 9, Kartapoulos teaches the connection between right nodes as a mesh network, as shown on Fig. 1 and 2 and disclosed on 4:36-5:65.

Regarding claim 14, Kartapoulos teaches using ATM standard in the disclosed system 1:30-45.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 1, 3-9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masson US 4,975,909).

12. Regarding claim 1, Masson substantially teaches the limitations of claims:

A network (network 300, as shown on Fig. 15 and 7:55-8:66), comprising:

a plurality of left side switches (a plurality of first/left stage switching modules, shown on Fig. 15 and 7:55-8:10) and;

a plurality of right side switches (right switching modules, interconnected with hyper-ring 306, as shown on Fig. 15 and 8:10-36), wherein each of the plurality of left side switches are coupled to each of the plurality of right side switches (as clearly shown on Fig. 15), and wherein each of the plurality of right side switches are coupled to each other directly (right switching modules are interconnected by a hyper- ring 306, as shown on Fig. 15 and 8:10-36).

In addition, Masson teaches transmitting/receiving voice information 1:25-45.

Masson does not teach the system connections as bi-directional.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add arranging the system connections as bi-directional to the system of Masson to

improve the system operation in voice environment, as voice communications are known to be bi-directional.

13. Regarding claim 3, Mason teaches a system, comprising input and output ports, which are connected to corresponding stations 1:25-45.

14. Regarding claim 7, Masson teaches left side/input stations communicating with the right side/output stations through a bi-delta network, shown on Fig. 15, wherein left side switches are not connected with each other.

15. Regarding claim 8, Masson teaches equal number of end port connections (four) and interlink connections (four) of left side switches, as shown on Fig. 15.

16. Regarding claims 9, 12 and 13, Masson teaches hyper-ring network, connecting right side switches and therefore right side end devices/stations, as a full mesh network, shown on Fig. 15 and 5 to make the network redundant and non-blocking 7:1-9 and 8:10-28.

17. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masson in further view of Zola (US 4,400,627).

Masson substantially teaches the limitations of the parent claims (see rejection above).

Masson does not teach using Clos network.

Zola teaches using Clos network, as shown on Fig. 2 and 3:37-4:25, including the non-blocking operation of Clos network.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add using Clos network of Zola to the system of Masson to improve the system operation to avoid call blocking, due to the advantages of Clos method.

18. Regarding claims 5 and 11 (as best understood), Masson substantially teaches the limitations of the parent claims (see rejection above).

Masson does not teach networks as rearrangeably non-blocking, understood as networks with redundant links.

Official notice is taken that system with redundant links are well known in the art to reduce the call blocking in an event of an operational link failure.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add redundant links to the system of Masson to avoid call blocking.

19. Regarding claim 14, Masson substantially teaches the limitations of the parent claim (see rejection above), including switching voice 1:25-45.

Masson does not teach switches using ATM or SONET.

Official notice is taken that switches using ATM or SONET to switch voice communications are well known in the art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add switches using ATM or SONET standard for voice switching to make the system compatible with numerous devices utilizing one of the popular standards, like ATM or SONET.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (571) 272-7529. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dmitry Levitan
Primary Examiner
Art Unit 2616